

Notice of Allowability

Application No.

10/663,594

Examiner

Alan Diamond

Applicant(s)

SERRAS ET AL.

Art Unit

1753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed October 27, 2004.
2. ☒ The allowed claim(s) is/are 1,3-7 and 16.
3. ☒ The drawings filed on 16 September 2003 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 11102004.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Raymond Linker, Jr. on November 9, 2004.

The application has been amended as follows:

In The Claims

In claim 5, at line 2, please delete "deposited" and insert in its place --placed--.

In claim 6, at line 2, after "carrying" please insert --the--.

2. The following is an examiner's statement of reasons for allowance: Amano et al (EP 801428 A1) teaches a thermoelectric generator comprising a plurality of n-type and p-type semiconductor elements (31-36), which can be made from silicide-based material, a Bi-Te-Sb-Se-based material, an Si-Ge-based material, or $\text{Fe}_{0.98}\text{Si}_{2.5}\text{Co}_{0.02}$ and $\text{Fe}_{0.92}\text{Si}_{2.5}\text{Mn}_{0.08}$, i.e., instant polycrystalline semiconductor ceramics, wherein said semiconductor elements are placed alternately on a dielectric ceramic substrate, such as a substrate made from alumina, zirconia, magnesia, forsterite, etc, and wherein the semiconductor elements (31-36) are connected in pairs at their ends to form a plurality of thermocouples. In Table 2 at page 6 of Amano et al, examples of substrates are given, and the heat conductivity of the substrates ranges from 2.93 to 26.0 W/mK. It is acknowledged that said Table 2 recites "the smaller the better" for the target value of

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the heat conductivity. However, there is nothing in Amano et al, or the prior art, that leads a skilled artisan to a microporous ceramic having a thermal conductivity of less than 0.5 W/mK, as here claimed. Said alumina, zirconia, magnesia, forsterite, etc, do not inherently have such a low conductivity (as evidenced by said Table 2). The 0.5 W/mK is around an order of magnitude lower than the 2.93 W/mK disclosed by Amano et al. Amano et al is discussed in the paragraph bridging pages 2 and 3 of the instant specification, and the advantages of using a microporous ceramic having a thermal conductivity of less than 0.5 W/mK is discussed on page 8, line 36 through page 9, line 39, of the instant specification

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alan Diamond whose telephone number is 571-272-1338. The examiner can normally be reached on Monday through Friday, 5:30 a.m. to 2:00 p.m. ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

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published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Alan Diamond
Primary Examiner
Art Unit 1753

Alan Diamond
November 10, 2004

A handwritten signature in black ink, appearing to read "Alan Diamond", with a stylized, cursive script.